

Notice of Allowability

Application No.

09/873,302

Examiner

Karl D Frech

Applicant(s)

PATEL ET AL.

Art Unit

2876

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the response received 10/17/03.
2. ☒ The allowed claim(s) is/are 6-15, 22-27, 31-34 and 36.
3. ☒ The drawings filed on 05 June 2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- * Certified copies not received: _____.
5. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
 - (a) ☐ The translation of the foreign language provisional application has been received.
6. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE**

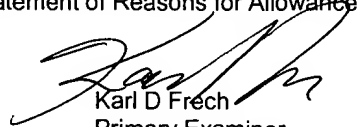
7. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
8. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No. _____.
 - (b) ☐ including changes required by the proposed drawing correction filed _____, which has been approved by the Examiner.
 - (c) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the margin according to 37 CFR 1.121(d).

9. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1 <input type="checkbox"/> Notice of References Cited (PTO-892) | 5 <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2 <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6 <input type="checkbox"/> Interview Summary (PTO-413), Paper No. _____ |
| 3 <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No. _____ | 7 <input type="checkbox"/> Examiner's Amendment/Comment |
| 4 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8 <input type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9 <input type="checkbox"/> Other _____ |


Karl D Frech
Primary Examiner
Art Unit: 2876

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Claims PTO

01/31/2004

AMW

Claims 1-5 Canceled.

6. (Currently Amended) An optical code decoding system comprising:

an imaging apparatus for obtaining and displaying video image signals comprising:

a handheld optical code reader including a two dimensional image sensor having means for outputting image data and video data at at least three frames per second, said handheld optical code reader further including and means for compressing said video data obtained output from the image sensor;

a host terminal with a communication port and display; and

a narrow band width data link over which compressed video data from the handheld optical code reader is are communicated to a communication port of the host terminal; and

at least one processor for decoding an optical code captured by at least the video data.

7. (Currently Amended) The ~~apparatus~~ system of claim 6, wherein the imaging apparatus further comprising comprises means for detecting a command bar code for switching the handheld optical code reader between an optical code reading mode and a video data communication mode.

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8. (Currently Amended) The ~~apparatus~~ system of claim 6, wherein the handheld optical code reader includes a microprocessor and output driver for communication with the host terminal, and wherein the host terminal is a computer with a serial communication port for receiving the compressed video data and for receiving decoded information from optical codes read by the handheld code reader.

9. (Currently Amended) The ~~apparatus~~ system of claim 6, wherein the narrow band width data link is a cable connected between the handheld optical code reader and a serial communication port of the host terminal.

10. (Currently Amended) The ~~apparatus~~ system of claim 6, wherein the narrow band width data link is a radio frequency transmitter and receiver.

11. (Currently Amended) The ~~apparatus~~ system of claim 6, wherein the narrow band width data link is an infrared transmitter and receiver.

12. (Currently Amended) The ~~apparatus~~ system of claim 6, wherein the imaging apparatus further comprising means for detecting motion in a field of view of the handheld optical code reader.

13. (Currently Amended) The ~~apparatus~~ system of claim 12, wherein motion is detected by monitoring the bandwidth of the compressed video signal.

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14. (Currently Amended) A method for reading an optical code disposed on an object and obtaining at least one physical parameter of said object, comprising the steps of:

providing an optical code reader configured for acquiring image data and video data at at least three frames per second; and

performing motion detection using ~~an~~ the optical code reader comprising the steps of:

positioning an image sensor of the optical code reader so that a field of view of the image sensor includes a region to be monitored for motion;

switching the optical code reader from an optical code reading mode to a ~~motion-~~ detection video mode;

~~compressing~~ analysing video data in the field of view of the image sensor; by

identifying changes between a set of frames of video data; and

monitoring the frequency of the changes between the set of frames of video data to identify frequency changes indicative of the movement of objects of interest in the field of view.

15. (Currently Amended) The method of claim 14, further comprising the steps of:

compressing the video data from the image sensor;

transmitting the compressed video data from the optical code reader to a terminal;

and

displaying the image of the field of view of the image sensor at the terminal, and

observing images at the terminal based on the detection of motion in the field of view.

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Claims 16-21 Canceled.

22. (Currently Amended) ~~The system of claim 6, wherein the~~ An optical system for a
handheld optical code reader further includes: including an image sensor, comprising:

an objective lens located in an optical path of the code reader for focusing an
image of an optical code onto the image sensor;

a carrier rotatable about an axis and having a sector radially outwardly located
from the rotation axis through which optical codes are read, the carrier having a second sector
located radially outwardly of the axis, said second sector containing an optical element, which
when placed in the optical path changes the focal distance of the objective lens ~~optical system~~ to
a focal distance more appropriate for producing video images with the handheld optical code
reader; and

means for rotating the carrier for selectively positioning a selected one of first and
said second sectors in the optical path.

23. (Currently Amended) ~~The optical~~ system of claim 22, wherein the first sector is
open and the second sector contains a plano glass optical element which increases the focal
distance of the optical system.

24. (Currently Amended) ~~The optical~~ system of claim 22, further comprising:
a third sector located radially outwardly of said axis and selectively positionable
in the optical path of the system and containing a first monochrome filter; and

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a fourth sector located radially outwardly of said axis and selectively positionable in the optical path of the system, containing a second, different monochrome filter, wherein the monochrome filters are employed to obtain image data to produce a color video display.

25. (Currently Amended) The optical system of claim 24, further comprising:

a laser pattern projector for projecting pattern from the handheld optical code reader, and

a fifth sector located radially outwardly of said axis and selectively positionable in the optical path of the system, containing an optical band pass filter approximately centered on a wavelength of the projected pattern.

26. (Currently Amended) The optical system of claim 25, further comprising means for monitoring the rotation of the carrier in response to the detection of the fifth sector being rotated into the optical path.

27. (Currently Amended) The optical system of claim 22, wherein the carrier is a wheel rotatable about a central axis thereof and divided into plural angular sectors, at least one of which sector being adapted for positioning in the optical path for imaging an optical code in a working depth of field of the optical code reader and at least two other sectors being adapted for focusing images on the image sensor from which a color video signal is derived.

Claims 28-30 Canceled.

31. (Currently Amended) ~~A method for~~ The method of claim 14, further comprising
the step of:
measuring orthogonal dimensions of a rectangular solid object in ~~a~~ the field of
view of ~~a handheld imager~~ the image sensor, comprising the steps of:
obtaining pixel information for the field of view of the ~~imager~~ image sensor;
determining a distance between the object and the ~~imager~~ image sensor;
determining the angles between edges of the rectangular solid meeting at a nearest
corner of the object and determining an imaged length of edges of the rectangular solid to be
measured from the pixel information; and
scaling the determined image length of the edges responsive to the determined
angles and determined distance between the rectangular solid and the ~~imager~~ image sensor to
obtain an approximation of the actual length of said edges.

32. (Currently Amended) The method of claim 31, wherein the distance between the
object and the ~~imager~~ image sensor is determined from a detected image of an aiming pattern
projected ~~by the imager~~ onto the object.

33. (Currently Amended) The method of claim 31, wherein the distance between the
object and the ~~imager~~ image sensor is determined from at least one image dimension of an
optical code symbol of known size on the object.

34. (Currently Amended) The method of claim 31, wherein the ~~handheld imager is~~
image sensor is incorporated within an imaging optical code reader.

Claim 35 Canceled.

36. (Currently Presented) The system of claim 6, wherein the at least one processor
further measures a physical parameter of an object from the image data and/or video data.